

AMENDMENTS TO THE CLAIMS:

Please amend the claims as follows:

1. (Original) A process for the preparation of perfluoropolyethers of formula:

T-CFX'-O-R_r-CFX-T' (I)

wherein:

T is -F, C₁-C₃ perfluoroalkyl, -CH₂OH, -CH₂NH₂, -CHO;

T' = T with the proviso that when T is F or C₁-C₃ perfluoroalkyl, T' is -CH₂OH, -CH₂NH₂, -

CHO;

X, X', equal to or different from each other, are -F or -CF₃;

R_r is selected from:

-(C₂F₄O)_m(CF₂CF(CF₃)O)_n(CF₂O)_p(CF(CF₃)O)_q-

wherein the sum n+m+p+q ranges from 2 to 200,

the (p+q)/(m+n+p+q) ratio is lower than or equal to 10:100, preferably comprised between 0.5:100 and 4:100,

the n/m ratio ranges from 0.2 to 6, preferably from 0.5 to 3; m, n, p, q are equal to or different from each other and when m, n range from 1 to 100, preferably from 1 to 80, then p, q range from 0 to 80, preferably from 0 to 50; the units with n, m, p, q indexes being statistically distributed along the chain;

-(CF₂CF₂CF₂O)_r wherein r ranges from 2 to 200,

-(CF(CF₃)CF₂O)_s wherein s ranges from 2 to 200,

comprising the following steps:

- A) preparation of perfluoropolyethers of formula

T'-CFX'-O-R_f-CFX-COF

(II)

wherein T' is -COF, -F, C₁-C₃ perfluoroalkyl, X, X', R_f are as above, by reduction of the corresponding perfluoropolyethers containing peroxydic bonds, with gaseous hydrogen in the presence of a catalyst formed by metals of the VIII group supported on metal fluorides, at a temperature from 20°C to 140°C, and at a pressure between 1 and 50 atm;

B) treatment of the formula (II) compounds with inorganic chlorides, preferably CaCl₂, by heating at a temperature in the range 100°-150°C obtaining perfluoropolyethers having acylchloride -COCl end groups;

B') treatment of the formula (II) acylfluoride or of the corresponding ester or of the corresponding acylchloride with gaseous ammonia, obtaining the corresponding amide, subsequently dehydrated preferably with P₂O₅, at a temperature in the range 150°-200°C, preferably at 170°C, with the obtainment of perfluoropolyethers with nitrile -CN end groups;

C) reduction of the perfluoropolyethers with acylchloride end groups, obtained in step B), or with nitrile end groups, obtained in step B'), of formula (IIa):

T''-CFX'-O-R_f-CFX-T''' (IIa) wherein:

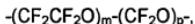
T''' = -F, C₁-C₃ perfluoroalkyl, -CN, -COCl,

T'''= T'' with the proviso that when T'' is -F or C₁-C₃ perfluoroalkyl, T''' is -CN, -COCl,

with gaseous hydrogen in the presence of a catalyst constituted by metals of the VIII group selected from Pd, Rh, Ru, supported on solid metal fluorides, at a temperature

from 20°C to 150°C, preferably from 80°C to 120°C and at a pressure between 1 and 50 atm, preferably between 1 and 10 atm, optionally in the presence of inert solvents.

2. (Original) A process according to claim 1, wherein R_r is selected from the following structures:



3. (Currently Amended) A process according to claim 1~~claims 1-2~~, wherein the metal fluoride of step C) is selected from the group formed by CaF₂, BaF₂, MgF₂, AlF₃, preferably CaF₂.

4. (Currently Amended) A process according to claims 1-3~~claim 1~~, wherein the concentration of the VIII group metal on the metal fluoride of the catalyst of step C) is comprised between 0.1% and 10% with respect to the total weight of the catalyst, preferably between 1% and 2% by weight.